

What is claimed is:

1. A semiconductor device comprising:
  - a first semiconductor chip;
  - a second semiconductor chip bonded onto the first
  - 5 semiconductor chip in stacked relation; and
  - a noise shield film provided between the first
  - semiconductor chip and the second semiconductor chip for
  - preventing the first and second semiconductor chips from
  - being mutually influenced by noises thereof.
- 10 2. A semiconductor device as set forth in claim 1,  
 further comprising a connection mechanism which connects  
 the noise shield film to a power supply portion.
3. A semiconductor device as set forth in claim 2,  
 further comprising a lead frame,
- 15 wherein the connection mechanism includes a  
 bonding wire which connects the noise shield film to a  
 portion of the lead frame which has a supply potential  
 or a ground potential.
- 20 4. A semiconductor device as set forth in claim 1,  
 further comprising an electrode portion provided between  
 the first semiconductor chip and the second semiconductor  
 chip for electrical connection between the first and  
 second semiconductor chips,
- wherein the noise shield film is composed of the
- 25 same material as the electrode portion.

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5. A semiconductor device as set forth in claim 4, wherein the electrode portion includes a bump which serves for electrical and mechanical connection between the first and second semiconductor chips.

5 6. A semiconductor device as set forth in claim 1, wherein the first semiconductor chip is greater in size than the second semiconductor chip, and the noise shield film is provided on a surface of at least the first semiconductor chip.

10 7. A semiconductor device as set forth in claim 6, wherein a major noise source is present in the second semiconductor chip,

wherein the noise shield film includes a shield portion which covers an area in which the major noise source is present, and an extension portion extending outwardly from the shield portion on a surface of the first semiconductor chip.

8. A semiconductor device as set forth in claim 1, wherein the noise shield film is provided in a region which covers a major noise source.

9. A semiconductor device as set forth in claim 1, wherein the first and second semiconductor chips are bonded to each other with active surfaces thereof being opposed to each other.

25 10. A semiconductor device as set forth in claim 1,

wherein the noise shield film includes a metal film provided on a surface of at least one of the first semiconductor chip and the second semiconductor chip.

11. A semiconductor device comprising:

5 a first semiconductor chip;

a second semiconductor chip bonded onto the first semiconductor chip in stacked relation;

10 a heat conductive member provided between the first semiconductor chip and the second semiconductor chip to define a heat release path for releasing heat generated by the second semiconductor chip; and

a connection member thermally connecting the heat conductive member to a heat radiator.

12. A semiconductor device as set forth in claim 11, wherein the heat radiator includes a heat sink.

13. A semiconductor device as set forth in claim 12, wherein the connection member includes a bonding wire which connects the heat conductive member to the heat sink.

20 14. A semiconductor device as set forth in claim 11, wherein the heat conductive member includes a metal film provided on a surface of at least one of the first semiconductor chip and the second semiconductor chip.

15. A semiconductor device as set forth in claim 14, wherein the first semiconductor chip is greater

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in size than the second semiconductor chip,

wherein a major heat source is present in the second semiconductor chip,

wherein the metal film has an extension portion  
5 which extends from the vicinity of the major heat source  
to a surface portion of the first semiconductor chip not  
covered with the second semiconductor chip, and the  
extension portion of the metal film is thermally connected  
to the heat radiator via the connection member.

10 16. A semiconductor device as set forth in claim 11,  
wherein the heat conductive member includes a first  
metal film provided on a surface of the first semiconductor  
chip and a second metal film provided on a surface of  
the second semiconductor chip, and the first metal film  
15 and the second metal film are disposed in contact with  
each other or bonded to each other,

wherein the first metal film is thermally connected  
to the heat radiator via the connection member.

17. A semiconductor device as set forth in claim 11,  
20 further comprising an electrode portion provided between  
the first semiconductor chip and the second semiconductor  
chip for electrical connection between the first and  
second semiconductor chips,

wherein the heat conductive member is composed of  
25 the same metal material as the electrode portion.



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a first semiconductor chip;

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semiconductor chip, and the second semiconductor chip.

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24. A semiconductor device as set forth in claim 21,  
wherein the metal film is provided in a region which covers  
a major noise source within the second semiconductor chip,  
and also provides a heat release path for releasing heat  
5 from the major heat source within the second semiconductor  
chip.

25. A semiconductor device as set forth in claim 21,  
further comprising an electrode portion provided between  
the first semiconductor chip and the second semiconductor  
10 chip for electrical connection between the first and  
second semiconductor chips,

wherein the metal film is composed of the same metal  
material as the electrode portion.